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PLANETARY PHENOMENA FOR MARCH AND
APRIL, 1909.

BY MALCOLM McNEILL.

PHASES OF THE MOON, PACIFIC TIME.

Full Moon....Mar. 6, 6 ^h 56 ^m P.M.	Full Moon....April 5, 12 ^h 28 ^m P.M.
Last Quarter.. " 14, 7 42 P.M.	Last Quarter.. " 13, 6 30 A.M.
New Moon.... " 21, 12 11 P.M.	New Moon.... " 19, 8 51 P.M.
First Quarter.. " 28, 8 49 A.M.	First Quarter.. " 27, 12 36 A.M.

The vernal equinox, the time when the Sun crosses the equator from south to north, occurs March 20th, 10 P.M., Pacific time.

Mercury is a morning star on March 1st, and continues to be such until April 21st. It then passes superior conjunction with the Sun and becomes an evening star. Greatest west elongation is passed on March 9th. The planet's apparent distance from the Sun is $27^{\circ} 26'$. This is greater by 9° than the greatest east elongation in January, and is due to the circumstance that the time of perihelion passage was about the same as the January east elongation, while the March west elongation occurs within a week of aphelion time. Conditions for visibility of *Mercury* as a morning star during the spring months are seldom good, but for this year the planet will rise more than an hour before sunrise during the first two weeks of March, and it can be seen as a morning star nearly as well as it could be seen as an evening star in January. After passing superior conjunction, on April 21st, it moves rapidly away from the Sun, and by the end of the month it sets nearly an hour after sunset. *Mercury* is in close conjunction with *Saturn* on April 13th and with *Venus* on April 19th, but the planets are then too near the Sun for naked-eye view.

Venus is a morning star on March 1st, and remains such until April 28th. It then passes superior conjunction with the Sun and becomes an evening star. On March 1st it is only about 14° away from the Sun and is at the same time about 7° south of that body; so it rises only a trifle more than

half an hour before sunrise, and it will scarcely be possible to see it, although the greater brightness of *Venus*, even when at its greatest distance from us, as it is at superior conjunction, makes it a much easier object than *Mercury*, when they are at the same apparent distance from the Sun. After the opening days of March it will certainly be too near the Sun for naked-eye visibility until some time after it becomes an evening star.

Mars rises a little after 3^h A.M. on March 1st, and at about 1^h 40^m A.M. on April 30th. It moves, during the two months, about 43° eastward and 5° northward from a position in *Sagittarius* north of the handle of "the milk-dipper" group to the eastern part of *Capricorn*. No very bright stars are near its path. Its distance from the Earth is still rapidly diminishing from 151,000,000 miles on March 1st to 104,000,000 miles on April 30th, and there is a consequent increase in brightness of a little more than one hundred per cent during the two months' period. At the end of April, however, it is still nearly three times as far away from us as it will be at the time of opposition in September, and only about one ninth as bright. On the afternoon of March 26th it is in conjunction with *Uranus*, passing only 18', a little more than one half of the Moon's apparent diameter, to the south. For a day or two before and after conjunction the planets will be near together.

Jupiter was in opposition to the Sun on the last day of February. It is therefore above the horizon practically the entire night during early March. By the end of April it rises early in the afternoon and sets at about 2^h 30^m A.M. It continues to retrograde,—that is, move westward,—not quite 5° during the two months, and 2° northward, toward *Regulus*, *α Leonis*, and at the end of April is only about 6° east of that star. Toward the close of April the westward motion becomes very slow, and it ceases on May 1st. After that date the planet resumes its general eastward motion.

Saturn is an evening star on March 1st, setting a little more than two hours after sunset. The Sun in its eastward motion among the stars rapidly overtakes the planet and passes it on the morning of April 3d. The planet then becomes a morning star and lags behind the Sun, so that by the end of the month it rises nearly an hour before sunrise. During a con-

siderable part of the two months' period *Saturn* is too near the Sun for naked-eye observation.

Uranus rises shortly after 4^h A.M. on March 1st, and shortly after midnight on April 30th. It is in the constellation *Sagittarius* and moves a fraction of a degree eastward until April 25th, when it becomes stationary. Its conjunction with *Mars* on March 26th has been noted.

Neptune is nearly stationary in *Gemini*.

EIGHTH AWARD OF THE BRUCE MEDAL.

At a meeting of the Board of Directors of the Astronomical Society of the Pacific, held on November 28, 1908, the Bruce Gold Medal of the Society was awarded to Doctor George W. Hill, of West Nyack, New York, for distinguished services to astronomy. The presidential address, reviewing the life and works of the eighth recipient of this medal, will be delivered at the annual meeting of the Society, to be held in San Francisco on March 27th.
